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THE

OPHTHALMIC REVIEW

A MONTHLY RECORD OF OPHTHALMIC SCIENCE

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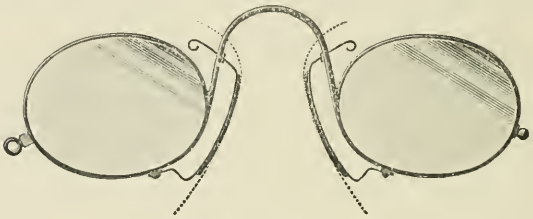

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AN OPERATION FOR THE RELIEF OF SYMBLEPHARON, OR TO ENLARGE A CONTRACTED SOCKET SO THAT IT MAY HOLD A GLASS EYE.

By Patrick W. Maxwell, M.D., F.R.C.S.I.

Assistant Surgeon, National Eye and Ear Infirmary, Dublin.

Attempts to treat the two conditions known as symblepharon and contracted socket are, in the experience of most ophthalmic surgeons, not particularly successful. The following operation, although it has been performed on only one case of symblepharon and one of contracted socket respectively, has, however, yielded such good results as, I think, to justify its publication.

Case I.—F. A., aged 17, came to the National Eye and Ear Infirmary on March 31st, 1891. About three years previously, while attempting to go through a doorway in the dark, she struck the edge of the door, which was open, and at right angles to the wall. The latch, which projected considerably beyond the door, ruptured the left eyeball and injured the orbit. Her own medical attendant very properly advised immediate enucleation. This was not at first permitted, and she made an apparent recovery with a phthisical eye-ball. Subsequent severe inflammation of the eye induced her friends to allow enucleation. She wore a glass eye satisfactorily for a time, but granulations, followed by cicatricial bands, soon contracted the socket so much that the glass eye could not be got in. These bands were two or three times removed only to recur.

When I saw her a fairly uniform cicatrix extended as an

Ophthal. Review, Vol. XII., No. 141, July, 1893.

inclined plane from the back of the socket to the edge of the lower lid, so that even if a small glass eye were put in, there was nothing to hold its lower edge. The fornix under the upper lid was of about normal extent in its outer half, but a cicatrix obliterated the nasal half in a manner similar to that described in the case of the lower lid.

After two weeks' treatment with nitrate of silver, on account of some conjunctivitis, an incision was made, parallel with the ledge of the lower lid, about 5 or 6 mm. deep in the floor of the socket. This was made to gape by drawing on the lower lid, and a piece of mucous membrane from the œsophagus of a cat was stitched to the edges of the raw surface. The graft took, and a fornix was formed, but in about two weeks the original condition was reproduced, and the new mucous membrane wrinkled up into a line.

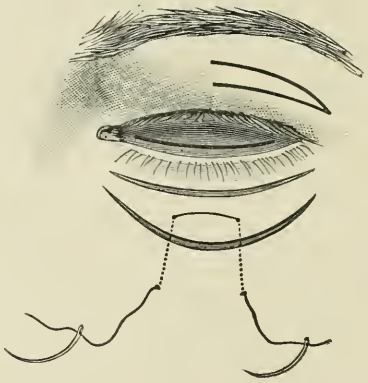


Fig. 1.

On October 15th, 1891, an incision similar to that in the last operation was made in the floor of the socket. This is shown by a line in the figure.

An incision rather longer than the first was then made in the skin, also parallel with the edge of the lower lid, and about 5 mm. below it. A second and more curved incision was made below this, leaving a piece of skin 3 mm. wide at each end, and about 8 mm. wide in the centre.

This was dissected up to form a bridge. The skin of the cheek below the last incision was then undermined for a short distance to allow of its being pulled up later. A suture, armed with a needle at each end, was now passed through two points in the middle of the bridge and brought out through two points in the skin of the cheek lower down. At the same time the incision at the upper border of the bridge was deepened so as to pass through the orbicularis muscle and palpebral ligament, and made to communicate with the incision in the floor of the socket. The bridge was now drawn behind the lower lid, its upper edge sutured to the posterior lip of the incision in the socket, and its lower edge to the anterior lip. The edges of the space in the cheek were then drawn together by a few sutures. Lastly, the ends of the suture in the bridge were drawn on till a good fornix was produced, and tied rather loosely over a piece of drainage tube.

It was thought that a similar operation on the upper lid from the necessary transverse division of the tendon of the levator palpebræ would produce ptosis. It was therefore, thus modified.

An incision was made through the cicatrix under the inner half of the upper lid sufficient to free it, and at a point corresponding to the outer end of this, two incisions were made in the skin of the lid and carried outwards to meet at a point forming a flap rather longer than the internal incision. This flap was dissected up to its base and a narrow knife passed right through into the socket making a vertical incision. The flap was now pushed through by a probe. Its raw surface was placed in contact with the raw surface inside, and secured with sutures. The edges of the skin gap were also sutured together. The suture tied over the india rubber tube was removed on the third day and the other sutures on the fifth. A glass eye was introduced for a short time on the tenth day, and worn for a longer interval each day. The puckers at each end of the cicatrices gradually smoothed down.

June 15th, 1893, her medical attendant in the country

wrote :—" I saw F. A. to-day. The eye is comfortable, and all contracting bands absent. There is quite room enough for a glass eye. There is very little scar on the lower lid."

Case II.—A. K., aged 36, presented herself at the National Eye and Ear Infirmary in May, 1892. For a year previously she had suffered from attacks of pemphigus in the left eye, and for a shorter period in the right. Dr. Fitzgerald, under whose care she was, and who has kindly permitted me to publish the case, tried various remedies without benefit. He finally tried the instillation of liq. chlori. daily, which seemed to have the effect of lessening the severity of the attacks, but the essential shrinking of the conjunctiva went slowly on.

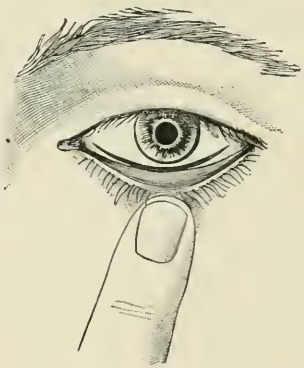


Fig. 2.

On April 15th, 1893, the cilia of the lower lid were touching the cornea, and on forcibly pulling down the lower lid the conjunctiva was so much contracted that the lower margin of the cornea was only about 5 mm. from the edge of the lid. Dr. Fitzgerald thought that a modification of the operation just described would relieve her.

Incisions were made in the skin of the lower lid, as in the other case, and a curved incision was made in the conjunctiva, its centre being 1 mm. below the lower edge of

the cornea (see fig. 2). The object of making the incision so high was to save what little conjunctiva there was to line the lower lid, as skin would be likely to irritate the cornea. To obviate the necessity of a suture in the bridge it was only partially undermined above and below. When stitched in position the subcutaneous connections held it down in the middle and made a good fornix. It would have been better to have used the suture, for, when the eye was dressed on the second day, it was found that the lax subcutaneous tissue had stretched, so that the floor of the fornix had risen considerably and ectropion to some extent been produced. The eye is, however, much more movable than before the operation. The upper lid and the other eye as yet require no interference.

These operations on the upper and lower lids respectively could, with modification to suit individual cases, be employed in the more ordinary forms of symblepharon from burns, &c.

J. SAMELSOHN (Cologne). On the Antagonism of Atropine and Morphine. *Reprint from the Centralb. f. Klin. Medicin*, 1893, *No.* 11.

The author points with surprise to the fact that medical writers are still debating the question whether morphine acts as an antagonist to atropine. His own experience of the value of morphine in cases of atropine poisoning has completely answered this question long ago.

During the course of twenty-six years Samelsohn met with nine cases of severe atropine poisoning, and this represented a proportion of about 1 in 10,000 patients. It is somewhat surprising, in view of the very frequent use—and as the author holds, the very frequent abuse—of

atropine in ophthalmic practice, that serious toxic symptoms should occur so seldom.

Six of the nine cases were in children, and were mostly due to unskilful use of the remedy, the drops finding their way into the mouth instead of into the eyes. The amount of the poison entering the system could not be estimated in these cases. The toxic symptoms were those ordinarily produced, viz., extreme excitement of the vascular system, great restlessness often passing on to delirium, and in some instances, general convulsions. In every case a morphine injection promptly brought the alarming symptoms to an end. The remarkable toleration of atropine by the dog was well illustrated in one of these cases. The drop bottle being overturned, its contents were licked up by a dog and produced in him no noticeable disturbance, whereas the small quantity of the same solution previously used for the child had produced severe toxic symptoms. Since adopting the practice of prescribing atropine for children only in the form of an ointment, Samelsohn has seen no further case of poisoning, even in the mildest degree. He adds, however, that a case in which a woman gave her child an ointment—happily not an atropine ointment—to eat, has warned him that even this method is not absolutely free from risk.

The other three cases were in adults.

Atropine drops prescribed for a child were taken by mistake by the mother, in place of another solution which she had received for internal use. Being summoned to the patient, Samelsohn found the usual vascular disturbance and feeling of intense anxiety. A subcutaneous injection of morphine 0.02 g. (nearly one-third of a grain) quickly relieved the symptoms.

The next case was one of some diagnostic uncertainty. Being hurriedly asked, in the absence of the usual medical attendant, to see a patient suddenly taken ill, the author found a young man 20 years of age violently delirious, struggling with several friends who with difficulty held him in bed, gesticulating to drive away the phantom figures around him; the face intensely red, the eyes brilliant,

the pulse 140, the respiration 34, the pupils widely dilated. The state of the pupils suggested atropine poisoning, but no member of the household was known to be using atropine in any form. It appeared that the patient had drunk, fifteen minutes before the onset of the attack, a home-made infusion for the relief of boils. A subcutaneous injection of morphine, of the same amount as in the previous case, quieted the patient in a few minutes so that he could himself give an account of the occurrence. It then transpired that the cook had used the wrong packet, that the infusion drunk by the patient had been ordered by a dentist for washing out the mouth, and that the chief ingredient was belladonna leaves. Half an hour after the morphine injection the toxic symptoms began to reappear and soon again reached an alarming height. A second injection again removed the delirium and lowered the pulse and respiration rate. The improvement lasted three hours, when a third injection followed by five hours' sleep permanently removed all symptoms with the exception of paralysis of the pupils and accommodation, which gradually disappeared during the following five days.

The final case is of especial interest because the poison was given subcutaneously like the antidote, and the dose was known in each case. A woman aged 50, under treatment in hospital, was ordered pilocarpine injections, and had received several such without any disturbance. Hurriedly summoned to her from an adjacent ward one evening, Samelsohn found her sitting up supported by the nurses, gasping for breath, the hand pressed to the heart, the face flushed and intensely anxious in expression, the pulse too rapid to be counted, the pupils widely dilated and fixed. The suspicion that the injection which an assistant had given a few minutes before was of atropine instead of pilocarpine was confirmed by a glance at the bottle still standing on the table. An immediate subcutaneous injection of morphine relieved the urgent symptoms in five minutes, removing the feeling of anxiety, reducing the pulse-rate, enabling the patient to lie down, and lessening the intense dryness of the throat; an ice bag to

the heart and the moderate administration of wine completed the relief. No further injection of morphine was needed, and three days later even the dilation of pupils had disappeared. The quantity of atropine injected was not less than 0.008 g. (about one-eighth of a grain), that of morphine was 0.02 g. (nearly one-third of a grain).

These observations show that morphine is a therapeutic antagonist to atropine: it appears to hold the toxic nerve disturbance in abeyance while the system eliminates the poison. P. S.

J. HOPPE (Göttingen). **A Fatal Case of Empyema of the Frontal Sinus with Exophthalmos.** (*Klin. Monatsbl. f. Augenh. Jahrg. xxxi., p.* 160.)

In the published cases of this disease of which the author gives a list, there are four in which death resulted; in one of these (Knapp, *Archiv. f. Augenh.*, bd. ix. 4), an abscess in the outer upper portion of the left orbit was opened and the symptoms—exophthalmos, swelling of lids, &c.—rapidly improved, but after six days the patient was suddenly seized with cerebral symptoms and died in forty-eight hours. On *post-mortem* examination localised suppuration was found at the base of the left frontal lobe, caused by a perforation from the frontal sinus which was filled with fœtid pus; as no ozæna or purulent discharge had been present, Knapp supposed that retention of the secretion in the frontal sinus and ethmoidal cells had occurred, and had caused the severe pains in the brow of which the patient had complained for two years before her death, and that the suppuration in the orbit and brain had been caused by the retained pus, much in the same way as abscess of the brain is caused by retained pus in the mastoid cells.

In the author's case the patient, a healthy man of 55,

suffered for six years from toothache for which several teeth had been removed; the toothache disappeared, but he then began to suffer from an occasional swelling of his right cheek, which, however, used to subside of itself. Two years before his coming to the clinic a mucous discharge, which had gradually increased and become purulent and fœtid, began to come from his right nostril, and for about six months he had suffered from exophthalmos on the right side, which occasionally suddenly disappeared, only however again to recur. When seen on November 11th, 1892, the right cheek was thicker than the left, the first and third upper molars on the right side were absent, and there was over the second bicuspid a bulging of the bone. The right nostril was coated with thick yellow fœtid pus, the left was normal; there was marked right exophthalmos, the right cornea protruding 20 mm., the left only 11 mm. in front of the outer edge of the orbit; the right eye was freely movable except upwards and inwards. Diplopia occurred on looking to the left or to the left and upwards; in the inner and upper orbit a soft tender swelling could be felt, pressure on which caused fœtid yellow pus to come from the right nostril; the right eye had $V=\frac{6}{18}$ and was otherwise normal. As daily pressing out the swelling with the use of warm nasal douches of benzoate of soda caused no improvement, a new exit was made for the pus through the middle of the upper conjunctival *cul-de-sac;* the next day, with marked feverish symptoms, the upper lid and palpebral conjunctiva swelled, and the exophthalmos increased, and fluctuation could be felt in the upper and inner part of the orbit. An incision was now made above and inside the internal canthus and a large quantity of fœtid pus let out; a jagged hole was found in the roof of the orbit leading into the frontal sinus; into this latter, after plugging with sterilised gauze, iodoform was introduced, and a wide drainage tube inserted. The nasal discharge now ceased, and on November 25th a small central corneal ulcer formed which soon perforated and then healed with anterior synechiæ. Meanwhile the exophthalmos gradually

disappeared, the inflammation in the conjunctiva and lids subsided, the right cheek was no longer swollen and the pus from the drainage tube which went upwards for about 5 cm. and into the frontal sinus, lost its fœtid odour. The drainage tube was kept clean, and the use of iodoform powder and the nasal douche continued. However, on December 14th the pus again became fœtid, and there was slight exophthalmos, and on the 15th the patient was feverish, delirious and vomited, and slight redness and swelling were observed at the inner canthus; these gradually spread, so that on the 16th there was erysipelas of the whole face. The evening temperature was now 39·7 Cent., pulse 160, and the discharge from the drainage tube ceased. On the 17th there was some improvement in the general condition, and blebs formed on the face and head, but percussion over the brow and head showed no especially painful place. During the 18th and 19th the erysipelas improved, but the heart's action became weak, and on the 20th the patient collapsed and died in the evening.

At the *post-mortem* examination, purulent infiltration of the pia mater on the ant. convexity of the right frontal lobe extending to the top of the lobe and slightly across the middle line, was found, and about 1cm. to the right and in front of the crista galli there was an opening in the bone about as large as a cherry stone, with sharp but smooth edges; over this the dura mater was cloudy (getrübt), and it formed the lower boundary of the purulent infiltration of the pia mater. Over this opening from the side of the frontal sinus was laid a semi-transparent elastic membrane, ½mm. in thickness, which appeared to be the lining membrane of the sinus, but in this no perforation could be found; a probe passed up through the fistula caused this membrane to bulge into the cerebral cavity; in the orbital wall of the sinus was an opening with irregular edges as large as a thumb-nail; the sinus contained half a thimbleful of pus mixed with iodoform, and on the mucous membrane, otherwise not much altered, was a layer of grey fœtid pus. In the middle meatus of the nose the mucous membrane was

discoloured and swollen, and contained three small blebs of fœtid pus; the changes were most marked near the openings into the frontal sinus and sinus maxillaris, and in this latter a layer of fœtid pus lined the cavity; the ethmoid cells were damaged in the dissection, so that no certain description of their condition can be given. The orbital contents were on macroscopic examination healthy, as were the optic nerve and its sheath. No tubercular or syphilitic lesions were found in the thorax or abdomen.

The author remarks that in this case there was not much difficulty in the diagnosis of empyema of the frontal sinus, and from the history, of the antrum Highmori also. The diagnosis was confirmed by electric illumination. He believes that the disease started in the antrum Highmori, where it was caused by carious teeth, and spread thence to the middle meatus and frontal sinus, causing a perforation in the orbital wall of the latter. The pressure of the swelling in this direction, and probably a slight orbital cellulitis caused the exophthalmos, which diminished whenever the secretion was able to discharge itself into the nose. As to the opening from the sinus into the cranial cavity, the author believes, from the absence of marked inflammation of the dura mater, and from the smoothness and sharpness of its edges, and from the seeming integrity of the lining membrane of the sinus, that it was not an inflammatory but a senile atrophic change, such as is known to occur in this position, and which may have been hastened by the pressure from within the sinus. The disease spread to the meninges probably by way of the lymph channels, and its existence was for a day or two cloaked by the attack of erysipelas. It is also possible that the erysipelas spreading inwards through the fistula and sinus to the meninges may have been the cause of death.

W. G. T. Story.

L. MÜLLER. Excision of a Piece of the Muscle in Squint Operations. *Klin. Monatsbl. f. Augenheilk Jahrg. xxxi., p.* 118.

The author believes that the operation to be described will be found an improvement on the ordinary operation of advancement. He prefaces his description of the operation with a very full account of the microscopic appearances in five pieces of antagonist muscle removed by him (three from the rect. ext. and two from the rect. int.) compared with those of the normal muscle, specimens of which were procured from criminals. The chief points of difference were as follows in the antagonists. (1) The clear fibres (hellen Fasern) were to be found in relatively greater numbers. (2) In transverse sections the large number of nuclei in the muscle cells and their central position in the cell was noticeable, and in longitudinal sections rows of nuclei were to be seen. (3) The finely striated normal appearance of muscular tissue had largely disappeared, but fatty degeneration was not found and the presence of connective tissue degeneration was uncertain. Definite changes, therefore, were found, as was to be expected, in the antagonists, as these muscles are for a length of time overstretched.

Vieusse (*Recueil d'Opht.*, p. 330, 1875) first practised excision of a piece of the antagonist muscle as a cure for squint, but he did this without combining with it tenotomy of the squinting muscle. Noyes also used the same procedure, both apparently in a few cases with good result, but the author's practice differs from theirs in the fact that he does not omit the tenotomy of the squinting muscle, but merely replaces the usual operation of advancement by one more consistent with surgical principles. He shows by quotations and by observations of his own that in the advancement operation the attachment of the muscle in its new position is difficult to secure, and may possibly, from its position being faulty, cause obliquity of the vertical axis of the eye. In his operation strict asepsis must be observed; the patient is put under an anæsthetic, to avoid

the difficulties caused by spasm of the muscles. An incision is then made vertically about four mm. from the limbus conjunctivæ and the muscle freely exposed and caught on the strabismus hook; its side attachments to Tenon's capsule are then divided with a pair of scissors by lateral incisions, reaching rather farther back than the length of muscle to be excised; the length to be cut out is then measured with a pair of compasses, allowance being made to leave a piece one or two mm. in length attached to the sclera; two strong silk threads are then passed through the muscle just behind the spot found by measurement, one above and one below so as to include about one quarter of the muscle each, and are made fast with surgical knots; one end of each suture is then cut off so that there is left knotted into the muscle one thread above and one below; in front of these the muscle is now divided and is divided again further forward so as to leave a stump one or two mm. in length attached to the sclera; through this stump another pair of sutures is passed in a similar way, leaving two free ends; the two upper and the two lower threads are now firmly knotted together, and if necessary, an ordinary Wölfler's tendon suture can be placed between them; the conjunctival wound is then closed with two sutures. The sutures in the muscle are never removed (in one of the author's cases they slowly after two months ulcerated out), and cause no inconvenience. Both eyes are bandaged for three days, and the sound eye is then half covered with a piece of plaster in such a manner that the patient can only see on that side on which the muscle has been sutured; on the fifth or sixth day the sound eye is altogether uncovered, and on the eighth day the eye operated on is also uncovered and the conjunctival sutures removed. The author gives a table of seven cases of strabismus divergens and seven of strabismus convergens thus operated on by him. His results seem to show that in strabismus divergens up to six mm. a piece of muscle corresponding in size to the deviation, and in strabismus divergens greater than six mm., a piece one or two mm. greater than the deviation must be removed to

effect a cure, and in strabismus convergens, a piece about one mm. shorter than the deviation. He gives a complete table of his results; of the seven cases of strabismus convergens four were completely corrected and three partially (to within one or two mm.); the amount of squint before operation in the different cases was from five to ten mm. In the seven cases of strabismus divergens three were completely and four partially (one to two mm.) corrected; the amount of squint before operation was from four mm. to eight mm. The movements of the eye are not restricted after this operation as they are when the combined tenotomy is omitted as by Vieusse and Noyes.

W. G. T. Story.

C. S. Bull, M.D., (New York). Gonorrhœal Irido-Choroiditis. *Annals of Ophthalmology and Otology. Vol.* ii., *page* 109.

Gonorrhœal iritis or irido-choroiditis Bull believes to be a variety of rheumatic inflammation, but it develops much more rapidly, and the plastic character of the inflammation is much less pronounced. It seems to be rather a mixed form of plastic and serous inflammation. It is not an uncommon complication in patients affected with gonorrhœa, and here it must be considered as directly connected with the urethritis. The inflammation of the uveal tract never seems to follow the gonorrhœa immediately, but is invariably preceded by a rheumatic arthritis, generally of the knee joint.

It is distinct from the usual type of rheumatic iritis. It is very sudden in its onset, and very rapid in its development. The pain is excessively severe, and the loss of vision is rapid and complete. But the inflammation, though sometimes obstinate, eventually subsides quickly; and usually leaves little or no trace behind it. There is almost never

any gelatinous or fibrinous exudation in the anterior chamber, and the main cause of the rapid and marked deterioration of vision seems to be due to a general serous infiltration of the iris and choroid, and a diffuse serous exudation into the aqueous and vitreous humours, more marked in the latter. Posterior synechiæ form, but they are soon broken, and as a rule leave no trace behind on the anterior capsule of the lens.

Such an iritis or iridochoroiditis is liable to relapse, even when no adhesions are present, whenever the patient contracts another attack of gonorrhœa. A neglected gonorrhœal iritis, in which multiple posterior synechiæ have been formed, may of course, readily relapse; and in consequence of relapses, the symptoms of the disease gradually lose their peculiar character. The disappearance of the iritis, under appropriate treatment without leaving posterior synechiæ proves the absence of the plastic character. Its prompt disappearance distinguishes it also from the usual form of serous iritis.

Dr. Bull reports two cases, illustrating the characteristics of the attack as it has come under his observation. The first, a man aged 25, had suffered from an attack five months previously, complicated by acute arthritis, but without involvement of the eyes, and from which he had recovered completely. In this second attack, arthritis appeared on the fourth day, involving knee, ankle, and wrist joints. On the eighth day, the right eye became involved with severe pain, photophobia and lacrymation. He was treated with leeches on each temple. Bull first saw him two days later, and there were then all the symptoms of a severe iridochoroiditis of the right eye; excessive ciliary and conjunctival injection, chemosis of the ocular conjunctive, cloudy aqueous humour, discoloured and immovable iris, posterior synechiæ, and extensive exudation into the vitreous humour, masking all details of the fundus. Vision was reduced to 10-200, and the tension was decidedly increased. There was excessive pain in the eye and head.

At that time, the left eye was intact, but on the eleventh day signs of iritis appeared in the eye, and a severe irido-

choroiditis rapidly developed. He was treated with leeches to each temple, hot fomentations, solutions of cocaine, and atropine applied every two hours; and 10 grains of sodium salicylate given internally every hour until three days later. This had to be discontinued on account of gastric disturbance, and potassium iodide in twenty grain doses was substituted. The pain was very much relieved in the first twenty-four hours of treatment, but at the end of the month, there was recurrence of inflammation in the eyes and in the knee joints. The sodium salicylate solution was again resorted to, but had to be given up, on the second day. Prompt improvement followed, and in seven weeks from the beginning of the attack, the eyes were free from inflammation with full vision in each. Knee joints nearly well; ankle and wrist joints entirely well; the urethral discharge had also ceased.

In the second case, acute arthritic inflammation had begun on the eighth day. On the fourteenth day there was violent pain in the right side of the head and right eye. The eye became inflamed and vision rapidy impaired. When seen on the fifteenth day there was considerable swelling of the lids, some chemosis of the conjunctiva, marked conjunctival and ciliary injection, a hazy aqueous humour, discoloured iris, posterior synechiæ, and a diffused infiltration into the vitreous, with scarcely any reflex from the fundus. Vision was reduced to perception of light. The tension was normal. The same line of treatment was pursued as in the first case. For the first three days no visible effect was produced upon the inflammation, though the pain in the head and joints was decidedly relieved. Then potassium iodide was given on the ninth day. All acute inflammatory symptoms in the joints disappeared. The urethral discharge ceased, the aqueous and vitreous cleared up rapidly, and the ocular injections gradually diminished. Three weeks from the time he was first seen all signs of irido-choroiditis had disappeared, the media were perfectly clear, and vision had risen to 20-30. The other eye remained intact throughout.

E. J.

E. KRUGER (Bonn). Ophthalmia Nodosa, caused by Penetrating Caterpillar Hair. *Archives of Ophthalmology*, xxii., 2.

Four cases of this unusual, or at least rarely recognised, disease are here recorded. They were observed in the course of two years at the eye-clinic at Bonn, and are characterised by multiple small nodules in conjunctiva, sclerotic and iris caused by penetrating caterpillar hair, and accompanied by severe iridocyclitis and deep corneal infiltration.

It will be sufficient if we refer to the first case only, as one is typical of all.

The patient, a healthy peasant girl, aged 23, presented herself for the first time on January 6th, 1891, saying that her left eye had been inflamed since the preceding September. There had been frequent exacerbations of pain and inflammation, these more acute attacks usually lasting about two weeks. The right eye was normal in all respects. The left showed intense pericorneal injection, was slightly photophobic, and, in the ciliary region, very sensitive to touch. Cornea rather hazy; in the centre there was a deep striated infiltration 2 mm. long, whose outlines were indistinct, and at the lower margin two smaller areas of infiltration which were superficial, vascular and clearly defined. In the lower part of the anterior chamber were two greyish-red exudations, about as large as a pin's head, and in the iris, which was much discoloured and hyperæmic, three small yellow-grey nodules with a fourth larger one evidently of the same nature. The lower pupillary margin was adherent: fine exudations were seen on the anterior capsule. Vitreous clear and V. $= \frac{20}{70}$.

The patient was at once admitted to hospital, but the eye did not readily respond to antiphlogistic treatment. The injection and corneal opacity increased, and there was hardly any reaction to atropine. A fresh exudation formed in the anterior chamber, and another nodule on the iris. The pain at this time was extreme, but abated after the

use of an artificial leech. On the 18th of January, ten miliary whitish-yellow nodules were seen under the ocular conjunctiva and below the cornea. Their appearance was associated with an increase of the inflammation. They were oval, about 1 to 1.5 mm. long, prominent, and arranged in groups of three or four, some adherent to the sclerotic, and some movable with the conjunctiva. A few days later, two more rather larger ones appeared at the upper corneal margin. On January 23rd, three of these nodules—two sub-conjunctival and one scleral—were excised, hardened in alcohol and stained with hæmatoxylin for microscopic examination. The sections were found to resemble tubercles tolerably closely. They were formed of an accumulation of round cells with an admixture of non-vascular scanty connective tissue, and surrounded by connective tissue, slightly infiltrated but without a special capsule. There were several giant cells, with numerous large nuclei about the centre of the nodules; a few epithelioid cells, and amongst them a yellow foreign body with two oval sections, a central lumen, and a yellowish cortical substance, strongly suggesting the appearance of a hair in oblique section.

This led to the patient being further questioned as to the possibility of caterpillar hairs having entered her eye, and it turned out that on the 26th of September, when she had first noticed the pain, her sister had thrown a black brown hairy caterpillar, in its rolled up condition, at her while hay-making, and this had struck her left eye. She did not think anything of it at the time, but rubbing made the eye painful; it got worse towards evening, and was acutely inflamed on the following day.

Judging by the description, the time of year, and the locality (a meadow amongst woods), there was little doubt that the caterpillar was one of the species *gastropacha rubi*, and a specimen of this was recognised by the patient as resembling that which was thrown at her. This caterpillar has tufts of dark brown hair, and on its back a band of short tough yellow hairs marked with black transverse lines. The latter have little hooks turned towards the

root, which would prevent any backward movement after the hair has once punctured the skin or other tissue, and it was to this class that the hairs found in section belonged.

The further course of this case was marked by frequent relapses. Heurteloup's leech was very beneficial in relieving the acute symptoms of these attacks, but it was not till after six months from the time when the case was first seen by Krüger that the relapses began to abate in severity and in frequency. About the same time the nodules became flatter and more transparent, they eventually in many instances disappeared, while others left small yellow or grey spots to mark their site. Synechiæ unchanged. Some vitreous opacities and an area of choridal atrophy down and out could be observed as the cornea cleared. The author concludes that the disease may be considered to have run its course, and to have been permanently cured.

Three instances of this disease are reported in the literature of the subject to which the author shortly refers. It is probable that such cases occur more frequently than is generally suspected, seeing that they belong to a class which may easily be overlooked. The history is not generally very definite, and the characteristic sub-conjunctival nodules which have no tendency to ulcerate may, especially if of long standing, escape observation.

N. M. ML.

M. BANHOLZER (Zurich). On the Pathology and Pathogenesis of Retinitis Proliferans. *Archiv. of Ophthal.*, xxii., 2.

The following is a brief abstract of this case, the special interest of which centres in the microscopic examination of the parts which the author was able to make. In only one instance hitherto has a case of retinitis proliferans been examined microscopically, and that at a late stage.

B. M., a woman aged 39, came to the clinic on October 3rd, 1890, saying that six days before she had struck her left eye against a waggon. Pain was severe for two days, and its vision was lost. The conjunctiva was ruptured on the nasal side and much ecchymosed. Cornea folded and opaque below; the anterior chamber contained blood, and there was no fundus reflex. T.—1. Light perception and projection good. After ten days the hyphæma cleared off, and a large iridodialysis was seen on the nasal side. Gradually the media became more transparent, showing a pigmented rupture of the sclerotic; there were many vitreous opacities.

Four months after the accident the eye became very painful without any apparent cause, and on May 25th, nearly eight months after the injury, the pain was so severe that the globe was excised. At that time there was no external irritation. On the nasal side there was a scleral scar about 1 cm. long and a coloboma of the iris, a transparent membrane with opaque stripes and points filling up both pupil and coloboma. Opacities in vitreous, and margins of the disc blurred. The disc was encompassed by a ring from which two white bands passed downwards towards the equator of the eye, diverging slightly as they went. The retinal vessels were beneath these bands, except just below the disc, where a large vessel bent sharply over one of them. No new vessels seen. All fine details of fundus obscured by the vitreous opacity.

After hardening, the globe was divided by a horizontal section.

The lens is absent; running from the ciliary body on the temporal side to a scleral scar on the nasal side is a membrane which separates the pupil from the anterior chamber. The anterior part of the vitreous is fairly clear, but farther back there is a yellowish opaque mass, which posteriorly is torn and folded, and connected by a few delicate fibres with the retinal bands. There is no retinal detachment, except in a small portion of the pars ciliaris. Round the disc is a raised wall of tissue 1.5 mm. high on the temporal, and 1 mm. on the nasal side, which is smooth and white, and passes gradually into the retina laterally. Just below the disc is a nodule from which a white band, 1 mm. thick, runs downwards. This band is inserted into the retina at its sides by thick striæ, and inferiorly spreads out somewhat in the manner of a fan. From the outer side of the disc runs another such band, which, however, is not so thick. The part of the raised wall above the disc passes gradually into the retina.

The microscope shows that between the membrana limitans interna and the layer of ganglion cells, there are numerous new cells, especially in the neighbourhood of the vessels. The greater part of the retina does not show any very marked pathological change. In the raised portions there is an excessive proliferation of the inner supporting fibres, and their inner ends are split up. Where the internal limiting membrane is intact a wide space is seen between it and the inner reticular layer through which the nerve fibres run. In other places dense connective tissue tracts run longitudinally; these are formed partly of elongated supporting fibres, and partly of connective tissue fibres. Towards the summit of the elevations this layer is broader and not so closely formed, and seems to result from undue connective tissue hyperplasia. Towards the disc the retina shows several sharp narrow folds.

The essential changes found are then: (1) a growth on the inner retinal surface made up of proliferated supporting fibres and new connective tissue. (2) a tissue resting on the membrana limitans interna, and (3) narrow well-

defined folds of the retina itself. There can be no doubt that the growth of the tissue on the inner surface of the internal limiting membrane is derived from a vitreous hæmorrhage near the retina; the retinal folding has most likely resulted from traction caused by the shrinking tissue. The case is one of true retinitis proliferans (Manz), and not retinitis striata. The exact part that the vitreous plays in these cases is a point of considerable interest. Whether the retinal proliferation is primary and the involvement of the vitreous secondary, the author does not feel qualified to say, but it is noteworthy that there are parts with excessive proliferation of the supporting tissue where there are no deposits on the side of the vitreous.

It is also uncertain whether the detachment of the membrana limitans interna would tend to aid the proliferation of the supporting fibres since the proliferation was well marked even where this membrane was unchanged.

The case shows particularly, says the author "that the histological changes are in quality similar to the changes found in other ocular affections, but that in extent and in localisation the changes are so characteristic, that we must consider them as constituting a distinct disease."

N. M. ML.

T. Hughlings Jackson (London). **Two Cases of Ophthalmoplegia Externa, with Paresis of the Orbicularis Palpebrarum (Illustration of Mendel's Hypothesis).** *Lancet, July* 15, 1893.

Dr. Hughlings Jackson adds two cases to the short list of those already published which, in their clinical aspect, support Mendel's theory that the fibres supplying the orbicularis palpebrarum arise from the nucleus of the third nerve, although they come out by the facial.

In the first case there is no very obvious loss of power to close the eyes, but the patient says that however tightly he shuts them he can still see daylight between the lids.

He also mentions that when washing his face soap constantly gets into his eyes. Further evidence of weakness of the orbicularis is brought out by the fact that it is quite easy to separate the lids even when he makes the greatest effort to keep them closed.

In the second case the paralysis of the orbicular muscles is not so great as in the one just mentioned. No daylight is seen when he shuts the eyes and soap does not get into them when washing, but here also the author had no difficulty in opening the closed lids however much the patient endeavoured to resist him. Contrasts with healthy persons were carefully made. When told to shut his eyes firmly he closed both well, the skin of the lids being thrown into wrinkles, the left rather less than the right. The following result was obtained from the electrical examination of the patient: — "On faradising the orbicularis palpebrarum there was found to be less response in this muscle than there is in that of a normal person. Several healthy persons were tested and a very distinct difference could be demonstrated. It was possible to obtain, by using a weak faradic current, no reaction in the patient's orbicularis palpebrarum, while the same current caused a distinct contraction in that of a healthy person; the patient's orbicularis oris reacted to a current which would not contract his orbicularis palpebrarum. On using the galvanic current it was found that there was no changed polar reaction, and that kathode closing contraction was in each case greater than anode closing contraction, but the contraction with the same current was not so good or so sharp as in that of a healthy person, although the same strength of current was used in both."

Dr. Jackson refers to a third case which he has seen with Mr. Couper since he wrote the notes of which the above is a brief summary. In this patient there was well marked ophthalmoplegia externa of both eyes, and ptosis on the left side. Both observers agreed that the obiculares palpebrarum were weak, the left rather more so than the right.

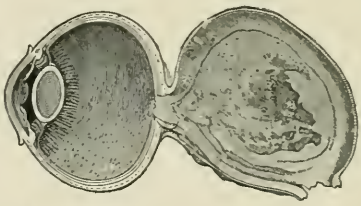
N. M. ML.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

THURSDAY, JUNE 8TH, 1893.

HENRY POWER, M.B., F.R.C.S., President, in the Chair.

Tumour of the Optic Nerve.—Dr. Rockliffe (Hull) reported the further history of a male patient, aged 20, who was shown to the Society in March, 1892, as a case of monocular proptosis. In December, 1892, the left eyeball and growth were removed *en masse*. Mr. Treacher Collins examined the specimen and his report is as follows: "The tumour is situated in the region of the optic nerve, and is covered by a distinct thin capsule, which is continuous with the sclerotic, and is apparently the expanded dural sheath of the optic nerve. The tumour is oval in shape, and measures in its longest diameter 27 mm., in its



Drawing of eyeball and tumour in vertical section; natural size.

narrowest 21 mm. It is of a greyish-fawn colour. An antero-posterior vertical section showed the parts of the eye in their normal position and apparently healthy; the vitreous of good consistency, the optic disc not swollen. The growth commences 2 mm. behind the globe, expanding the dural and pial sheaths and pressing the lower portion of the nerve downwards; this is seen as a distinct white band running along the lower border of the growth." Histologically the tumour consists of nucleated cells, which have numerous delicate branching processes, interlacing with one another and forming a network, the spaces of which are of very different shape and size; in addition,

there are bundles of closely-packed nucleated fibres and a few thin-walled blood vessels. Both pial and dural sheaths encircle the growth. The appearances resemble very closely those seen in gliomatous tumours of the brain, and the tumour probably originated in the neuroglia of the optic nerve.

Dr. Rockliffe referred to the rarity of such tumours, and quoted cases recorded by Hulke, Lawson, Brailey, and others. He considered the symptoms of tumour of the optic nerve to be: Slowly but progressively increasing proptosis and loss of vision, with absence of pain and constitutional derangement, the appearances of the eye externally and of the fundus oculi being normal with the exception of proptosis and dilated retinal veins, and possibly some atrophy of the nerve, accompanied with symptoms of posterior pressure on the globe. If the tumour sprang from the sheath the displacement would probably be forwards and non-central, and the movement of the globe limited; but if from the nerve, the proptosis would be central, with no limitation of movement of the globe. He suggested the advisability of taking the field of vision in such cases as likely to lead to more exact diagnosis. The paper was illustrated by specimens and drawings.

On the Combined Method of Cataract Extraction.—This paper was read by Mr. Swanzy. The author reported 100 consecutive operations for uncomplicated senile cataract by the combined method, *i.e.*, extraction upwards combined with iridectomy. He strongly advocated this operation, in preference to extraction without iridectomy. The results obtained were: 95 good, 2 medium, and 3 failures. The three failures were due to iritis. The accidents and irregularities which occurred during the operation were: Loss of vitreous in small quantity twice. Hæmorrhage in the anterior chamber such as to interfere with the normal progress of the operation three times. Section too short four times: in two of these it was lengthened with scissors. Some cortical lens matter was

left twenty-seven times, but in all except three cases it was insignificant in amount. Reflex vomiting during and after the operation occurred in two instances. No case of suppuration occurred, careful antiseptic measures being regularly employed. There were six cases of plastic iritis. Marked striped keratitis occurred six times, besides frequently in slighter degrees, but in no instance did it leave permanent damage behind it. The incision the author advises occupies the upper third, or a little more, of the corneal margin. A coloboma of about 3.5 millimetres is made, and great pains are taken to reduce each of the pillars of the iris into the anterior chamber completely. Such a coloboma is sufficient to obviate secondary iris prolapse by providing a way of exit for the aqueous behind the iris when the wound happens to be ruptured during the first few hours of the healing process. In this series incarceration of the iris occurred only once, and that was in one of the cases where reflex vomiting took place. As one of the final steps of the operation, Mr. Swanzy lays much stress on search with forceps for any tag of capsule which may lie in that part of the wound which corresponds to the coloboma. If such a tag be captured it is drawn out and snipped off, and thus prevented from becoming incarcerated in the wound during healing. In 18 instances out of the 100 capsule was found in the wound and removed.

The President, after thanking Mr. Swanzy for his paper and congratulating him on the excellence of his results, said that he was unable to agree with him on the question of iridectomy in extraction of cataract. He preferred, and had for many years practised the simple operation, and believed he obtained better results therefrom than by the combined method. He mentioned a case in which serious damage to the cornea followed the incautious use of a strong solution of cocaine.

Mr. Critchett spoke in favour of the combined method of operating. He also referred to the danger to the cornea of the too liberal use of cocaine ; he had for some time been in the habit of applying a drop or two of cocaine solution

to the iris before doing the iridectomy, and with altogether satisfactory results.

Dr. Drake-Brockman said that he had abandoned iridectomy in his cataract operations since 1878. He had performed a very large number of extractions by the simple method since that date, and was satisfied with the general results. He was unable at the time to give the actual figures, but thought that prolapse of iris occurred in about 6 per cent.

Messrs. Tweedy and Adams Frost expressed their preference for the combined method of operation.

Mr. Hill Griffith mentioned some of the results obtained at the Manchester Eye Infirmary by both procedures. The figures, so far as they would bear comparison, were slightly in favour of the simple operation.

Mr. Richardson Cross thought it unwise to conclude that all cases must be treated by one plan of operation. He held that the simple operation was most suitable for a certain proportion of cases, the combined method for others.

Mr. Swanzy replied briefly to the remarks of the above-mentioned speakers. He thought that probably those operators who had given up iridectomy in cataract extractions had been accustomed to remove a large piece of iris, and so leave a disfiguring coloboma, and one which for visual purposes was objectionable. If a small iridectomy were performed he did not think such objections could be very seriously raised.

Living and Card specimens.—Mr. Juler: Microscopic Sections of Ciliary Sarcoma. Mr. John Griffith: Specimens of a Tumour of the Ciliary Body. Mr. Haydon: Ruptured Choroid with Perforations of the Iris. Mr. Stanford Morton: Pemphigus of the Conjunctiva. Mr. Marcus Gunn: Pemphigus of the Conjunctiva. Mr. Lawford: New Growth in Ocular Conjunctiva. Mr. Donald Gunn: Congenital Ophthalmoplegia Externa in Two Brothers. Mr. Doyne: Drawing showing a Cherry-red Spot at the Macula. Mr. Ernest Clarke: Nævus of Right Side of Face, Lids and Conjunctiva, with Cataract in Right Eye.

FRIDAY, JULY 7TH, 1893.

HENRY POWER, F.R.C.S., President, in the Chair.

Epithelial Pearl Tumour of the Iris, following Implantation of Eyelash in the Anterior Chamber.—This paper, by Messrs. Richardson Cross and Treacher Collins, was read by the latter. J. C., a boy, aged 8, came under the care of Mr. Cross seven months after his right eye had been wounded with a piece of wire. On examination, the eye was free from inflammation, tension normal, there was a traumatic capsular cataract, with posterior synechiæ. In the anterior chamber at the upper and inner part was a small nodule, from which an eyelash passed downwards in front of the iris. An operation was undertaken to remove the eyelash, and if possible the nodule, which was thought to be an inplantation cyst growing from the root sheath of the cilium. The eyelash was readily removed; the cyst was so finely adherent to the iris, that it could not be extracted, but came away piecemeal in the forceps. The wound healed well. Two months afterwards the tumour had commenced to grow again. The patient then disappeared for nearly a year, when he returned with great irritability, lacrymation, and photophobia of the right eye. The tumour had much increased in size, and as the left eye showed signs of sympathetic irritation, and the former operation had been so difficult, the eye was enucleated. Mr. Treacher Collins, who examined the specimen, reported the tumour to be surrounded by pigmented iris tissue, and separated from cornea, vitreous and ciliary body. The mass situated in the iris is a cyst lined by laminated epithelium, the cells in contact with the iris tissue being the best developed; the innermost ones are flat and scaly; the cyst is filled with an opaque white material, consisting of fat globules and polyhedral cells without visible nuclei. They are probably degenerating epithelial cells. The pupillary border of the iris is united by newly formed fibrous tissue to the anterior capsule of the lens.

Seven analogous cases were referred to in all of which the tumour had resulted from long residence of an eye-

lash in the anterior chamber. In all the histology of the cystic growth appeared to have been very similar to the case now reported. The importance of diagnosing the presence of an eyelash in the anterior chamber, and the good results of early removal of the same, were insisted upon by the authors.

Dr. Rockliffe (Hull) referred to a case he had reported to the Society,[1] in which a cystic growth in the anterior chamber followed the implantation of an eyelash. Since that date he had had another case under care in which one eyelash, perhaps two, had been carried into the anterior chamber through a corneal wound by a piece of wire.

Mr. Ernest Clarke had reported a case two years ago. He had been able to remove the eyelash.

Mr. Snell (Sheffield) referred to a case now under his observation. He had operated on the patient for cataract fourteen years ago; there is now a cyst in the anterior chamber, which he thinks may be of the same nature as that described by the previous speakers.

The Diagnosis and Prognosis of Pathological Myopia.—Dr. Rayner D. Batten read this paper. After reference to a former paper in which he maintained that myopia was frequently the result of constitutional disease,[2] he said that in the present communication he would endeavour to show that a diagnosis of the constitutional cause of myopia may be made from the condition of the fundus oculi. The term physiological myopia should be confined to a simply refractive condition, in which there is no fundus change of any kind. Pathological myopia is not necessarily a refractive condition, may even be associated with emmetropia or hypermetropia, and is characterised by the formation of crescents, the stretching and distortion of the vessels, the presence of staphylomata, local and general disturbance of pigment. At present physiological myopia is not distinguished from pathological myopia in its early stages, but only when the latter is far advanced. Pathological myopia

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[1] *Oph. Soc. Trans.*, 1883.

[2] Ophthalmic Review, January, 1892.

may be acute, chronic-progressive, or stationary. The acute may end in arrest, or become chronic, and may be the result of various constitutional diseases. In the chronic form a diagnosis may be made between myopia due to cardio-vascular conditions, struma and inherited syphilis, and unhealthy occupations. Pigmentary changes in the choroid are commonly associated with myopia: marked pigment change at the margin of the crescent is a sign of acute myopia, and in the chronic form a distinction is made between a thin choroid, rendering the choroidal vessels visible and occasionally associated with a very fine dust-like retinal pigment change, and a choroid in which the pigment appears divided into islands; the former is attributable to cardiovascular conditions; the latter, to strumous or specific disease. Staphylomata, four classes: (1) that in which the staphyloma is in the macular region; (2) that in which it occurs on the nasal side; (3) that in which the optic disc forms the deepest part of the staphyloma; and (4) that in which the staphyloma is situated towards the periphery. In all cases except the first the refractive condition at the optical axis is no measure of the extent of the myopia. Peripheral myopia is a cause of astigmatism, by causing distortion of the lens and cornea. Distortion of the vessels, three forms: (1) when the vessels are drawn from their normal course in relation to the optic disc; (2) when they appear stretched and straightened; (3) when they emerge by separate branches from the optic disc. The direction of the distortion of the vessels depends on the position of the staphyloma. This is particularly marked in cases of nasal staphyloma, the vessels being drawn to the nasal side of the optic disc, and the macular branches having to bend back in order to supply that region. Distortion of the vessels is one of the early signs of commencing myopia. The direction of the distortion points to the position of the staphyloma, and the degree of the distortion or stretching of the vessels is an important factor in the prognosis. Central (physiological) cupping of the optic discs, is a form of staphyloma, and an early manifestation of commencing myopia, and responsible for the

exit of the vessels from the optic disc in numerous branches, the main trunk of the vessels having been drawn into the staphyloma. The early premonitory signs of myopia are central cupping, distortion of the vessels, commencing crescents, and astigmatism.

Recurrent Third Nerve Palsy associated with Migraine.—Mr. Snell (Sheffield) related two cases; one was in a young man, aged 27. Migraine had existed since the age of 10, but only for the last seven years had the eye been closed during the attacks. The attacks, at first at intervals of about eight weeks, now recurred every two or three weeks; they lasted three or four days. The palsy of third nerve was practically complete, ptosis and paralysis of the ocular muscles including dilated pupil and palsy of accommodation. The attacks commenced with vomiting and headache. The ocular palsy in the interval did not completely pass off, and the latest accounts, two years after he had last been seen, indicated that the drooping of the lid was becoming more permanent. The second case was in a girl, aged 18. She had two severe attacks at intervals of four years, though migrane outbreaks continued in the interval. Each time she had made a perfect recovery, though the third nerve was not, at the worst, as completely paralysed as in the first case. Recovery was much longer in taking place. Mr. Snell gave additional particulars of a similar case he had brought to the notice of the Society some years ago. He remarked that the shorter the interval the more rapid appeared the recovery in these cases, and also that the affection seemed to be always monocular.

Living and Card Specimens.—Mr. Work Dodd: Pemphigus of Conjunctivia.—Mr. Holmes Spicer: Ectopia Pupillæ.—Dr. Batten: Pigmentary Moles in Retina.—Mr. MacKinlay: Hyperostosis of Skull.—Mr. Lawford: Microscopic Sections of Sarcoma of Conjunctiva.—Mr. Adams Frost: (1) Retinitis Proliferans, (2) Papillary Growth of Cornea.

Election of Officers.—At the conclusion of the meeting the annual general meeting of the Society was held for the election of officers for the ensuing session, and to receive the report of the Council. The following officers were elected: *President:* D. Argyll-Robertson, M.D. *Vice-Presidents:* Edgar A. Browne (Liverpool), George Lawson, Stephen Mackenzie, M.D., William M. Ord, M.D., D. C. Lloyd Owen (Birmingham), Henry Power, Simeon Snell (Sheffield), John Tweedy. *Treasurer:* George Cowell. *Secretaries:* Charles E. Beevor, M.D.; Gustavus Hartridge. *Librarian:* W. Adams Frost. *Other Members of Council:* Ernest Clarke, M.D.; F. Richardson Cross (Bristol): J. Mackenzie Davidson, M.B. (Aberdeen); Robert W. Doyne (Oxford); A. Hill Griffith, M.D. (Manchester); J. R. Lunn; Joseph Nelson, M.D. (Belfast); J. A. Ormerod, M.D.: W. C. Rockliffe, M.D. (Hull); A. E. Sansom, M.D.; G. H. Savage, M.D.; A. Quarry Silcock. After the customary vote of thanks to the retiring officers, the Society adjourned till October.

We have been requested to remind intending contributors to the Ophthalmological Section of the International Medical Congress, which meets at Rome towards the end of September, that they should forward the titles of their communications, if they have not already done so, to the Secretary, Dr. Parizotti, as soon as possible.—[Ed.]

TO CONTRIBUTORS & CORRESPONDENTS.

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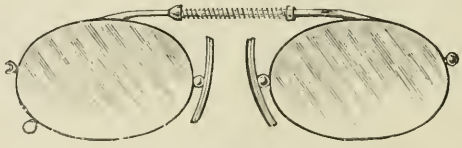

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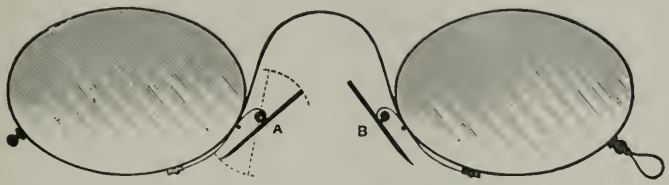

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